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## Implementation of ICO European best practices by SMEs

**Abstract.** The article deals with a new financial tool of attracting capital, known as Initial Coin Offering (ICO). In conditions of reduced banking lending and difficult access to finance for SMEs, ICO is viewed to be one of the possible ways to access capital. It considers the main advantages and disadvantages of ICO performance, including its typical features, challenges and regulatory approaches to tax regulation, cybersecurity. The authors of the article determine stages of the ICO mechanism, identifying potential risks and ways to mitigate them, focusing primarily on the need to control and regulate ICO projects. The authors identify the main types of ICO funding, including hybrid and pure funding. The research contains an analysis of ICO trends and their duration for the period of 2013-2017. The capital raised through ICO performance over the period of 2013-2017 is analysed, and determination of the exponential trend line showing the level of its approximation is determined. The study covers the territorial distribution of ICO, in which the top positions regarding the amount of capital raised by ICO are attributed to the USA and EU member states. The existence of ICO regulation in European countries, such as Switzerland and UK, was defined positive in terms of further development of the relevant regulation in the financial market. The article considers the best ICO practices in EU member states. To mitigate risks relating to ICO performance and to increase the level of investment, it would be reasonable to create regulatory rules in every country where cases of ICO performance are reported, based on the practice of the mentioned European countries. The authors give recommendations regarding ICO regulation in Ukraine, taking into consideration the relevant European experience.

**Keywords:** ICO; Cryptocurrency; Token; Blockchain; Investment; Funding; Risk; Volatility; Regulation

**JEL Classification:** G31; G32

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**Шляхи реалізації найкращих європейських практик ICO в діяльності підприємств МСБ**

**Анотація.** Метою статті є визначення шляхів реалізації найкращих практик ICO в діяльності підприємств МСБ в Україні. Розкрито сутність ICO, його характерні риси та методичні основи. Авторами статті було розглянуто механізм здійснення ICO, а також названо як потенційні ризики, пов'язані з ICO, так і можливі шляхи їх усунення. Дослідження окреслює типи та моделі фінансування через процедуру ICO. Визначено тенденції та кращі практики розвитку ринку ICO, а саме: територіальний розподіл ICO, суми залучених коштів та темпи його зростання. Наголошено на відсутності відповідного законодавчого регулювання в більшості країн, за винятком Великобританії та Швейцарії. Було розроблено рекомендації щодо регулювання ICO в Україні на основі європейського досвіду.

**Ключові слова:** ICO; криптовалюта; токен; блокчейн; інвестиції; фінансування; ризик; волатильність; регулюваність.

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## Пути реализации лучших европейских практик ICO в деятельности предприятий МСБ

**Аннотация.** Целью данной статьи является определение соответствующих путей реализации лучших практик ICO в деятельности предприятий МСБ в Украине. Авторы статьи раскрывают сущность ICO, его характерные черты и методические основы. Авторами был рассмотрен механизм осуществления ICO с выделением потенциальных рисков, связанных с проведением ICO, и возможных путей их устранения. В исследовании определены типы и модели финансирования через процедуру ICO. Обозначены тенденции и лучшие практики развития рынка ICO, а именно: территориальное распределение ICO, суммы привлеченных средств и темпы роста. Кроме того, было определено отсутствие соответствующего законодательного регулирования в большинстве стран, за исключением Великобритании и Швейцарии. Разработаны рекомендации по регулированию ICO в Украине на основе европейского опыта.

**Ключевые слова:** ICO; криптовалюта; токен; блокчейн; инвестиции; финансирование; риск; волатильность; регулируемость.

### 1. Introduction

Recently Initial Coin Offering has become a very popular financial tool among SMEs in terms of accessing capital. In the USA and European countries, it is being developed at an accelerated rate. Also, the Ukrainian ICO market is trying to be proactive in this regard, and its indicators still have large potential for growth. In Ukraine, this process is accompanied by a number of regulatory problems, the absence of safeguards for investors, and a lack of business security or investors' awareness and credibility. It is widely believed that ICO is the right tool for SMEs, taking into account their risky activities. The number of ICO risks is significant and potential investors should take this into account. The main goal of ICO investors is to secure a high level of income. As a consequence, they tend to believe in SMEs projects without a detailed study of white papers, terms and conditions, and private policies, thus increasing the risks.

Taking into consideration the fact that the main constraints for SMEs are the lack of banking loans and difficulties in access to finance, ICO offers fast fundraising. Taking regulatory measures is a principal activity aimed at reducing ICO risks. Due to this, ICO in Ukraine has all chances to become the most popular financial tool for finding funding sources. A certain set of actions, as well as the use of experience of European countries, makes it possible to reduce risks related to funding and to protect investors.

### 2. Literature Review

There is a relatively small body of literature concerning the issues of ICO. It is related to its recent appearance and growing popularity among individuals and legal entities. Lack of scientific research is also caused by the absence of empirical base and its regulation. Nevertheless, the first serious discussions and analyses of ICO have emerged during the last years.

Previous studies by D. Hileman and M. Rauchs [6] have shown significant increases in ICO deals. This is the first and one of the largest studies which systematically investigated key ICO industry sectors by collecting empirical, non-public data. Their research is based on survey data from nearly 150 ICOs, and it covers 38 countries.

A. Sehra et al. [9] developed recommendations in this area that could provide stability (or softer lending conditions) in the ICO market.

There are also works related to selected countries. For instance, A. Iurina [7] considered ICO in Gibraltar. In the mentioned study, the author proposed a strategy and recommendations for ICO, based on an analysis of token volatility. Meanwhile, Y. Zhang [12] reviewed the history of evolution of different types of cryptocurrencies and reasons for fluctuations in their market price. She observed connections between the miner reward and the market price, and also studied the monetary policy for each of the cryptocurrencies under research.

G. Morgan and C. Finney [8] defined ICO advantages and disadvantages. Their study also shows how ICO can be used as a tool for money laundering. The researchers believe that the relevant issues need to be regulated.

A. Hayes [4-5] made a research based on an empirical analysis and outlined factors impacting the value of ICO. Later he developed a cost of production model for Bitcoin, which can be used in making financial decisions.

B. Becker and D. McAvoy [1] analysed the 2018 initial coin offerings, describing typical features of ICO, certain requirements of private placements and a forecast of the impact of ICOs in 2018.

EY also made a cross-country analysis [3], which introduced Ukraine on the ICO market map. There are also a lot of discussions around the regulatory issues of the ICO market. Researchers from the Institute of Fundraising from UK (London) demonstrated how their research operated within the existing fundraising guidelines. The Deloitte Blockchain Institute compared ICO and IPO and made a conclusion about the adaptability of ICO for SMEs and IPO for large entities. In addition the authors also emphasised the principle difference between ICO and crowdfunding.

As we can see from the literature review, reports confirm the rising popularity of ICO. At the same time, there is a lack of academic research. Consequently, existing scientific papers do not reflect recommendations for the development of ICO in Ukraine. Therefore, our research reflects best European practices which should be used within the Ukrainian ICO market, along with the measures which should be taken to regulate the market in order to reduce risks.

### 3. Purpose

The purpose of the article is to define proper ways to implement best European ICO practices with regard to activities of Ukrainian SMEs.

### 4. Results

#### 4.1. ICO Essentials

Initial coin offering (known as ICO, or token launch, or token generation) presupposes a predefined number of transferable tokens to investors, typically in exchange for major cryptocurrencies, such as Bitcoin or Ether [1-2]. Therefore, this is the process relating to a company emitting its own tokens (an analogue of the shares on the traditional financial market), the placement of which is passed through a cryptocurrency exchange. Figure 1 provides detailed features of ICO.

The main challenges faced by issuers are the lack of tax regulation, weak cybersecurity and no uniformity of government regulations. To launch ICO, an issuer will typically produce a white paper, which is analogous to a prospectus or an admission document that a company is required to produce in the connection with the admission of securities.

The main features of the ICO mechanism are presented in Figure 2. According to Figure 2, the most complicated stage for ICO launching is the fourth stage, namely the token emission on Blockchain, which is associated with risks such as high price volatility, lack of proper due diligence and protection.

Besides, the types of tokens for issue to be chosen and the types of possible funding are among the most important elements for the performance of ICO. The main factors of the mentioned processes are described in Figure 3.

#### 4.2. Tendencies of ICO Market Development

Despite the fact that ICO processes are still unregulated in the majority of cases, they are spreading significantly (Figure 4).

Figure 4 illustrates that the growth rate in 2017 is more than 7.5 times higher than that of the indicators in 2016 and considerably exceeds the 2013 rate, reaffirming that ICO becomes one of the prevalent ways for a company in terms of the creation of unique features of token issue and ways for

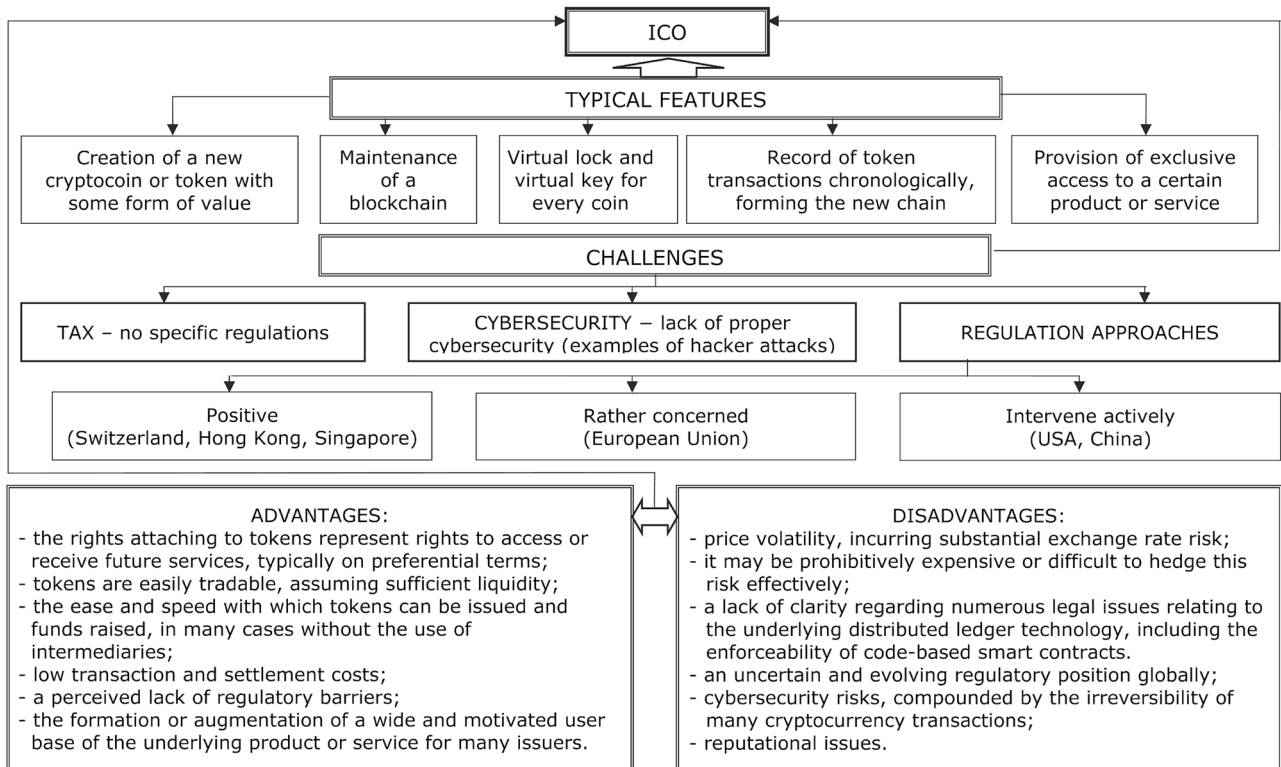


Fig. 1: ICO fundamentals

Source: Compiled by the authors based on [1; 2; 8]

raising capital. The amounts attracted by ICO performance in dynamics are given in Figure 5.

The tendency of ICO amounts represents the substantial interest from investors, and its forecast can be made with the help of the exponential trend with a high level of approximation. Figure 6 shows the territorial representation of ICO.

The overall trend of ICO is mostly represented in North America, Europe and Asia, which is predominantly due to the level of government regulation and the existence of legal frameworks for cryptocurrencies and ICO in particular.

#### 4.3. ICO regulation and European best practices: perspective for Ukraine

In the European countries, a concerned attitude towards cryptocurrencies is observed. According to the EU standards, tokens may be considered as financial tools.

The European Securities and Markets Authority (ESMA) is in charge of regulations connected with investments in ICO regarding high volatility risks and the lack of legislation. However, there are favourable conditions for conducting ICO in the UK and Switzerland.

ESMA requirements [13] for companies performing ICO are to follow regulations of investment activities, exemplified as the Prospectus Directive, the Markets in Financial Instruments Directive (MiFID), the Alternative Investment Fund Managers Directive (AIFMD) and the Fourth Anti-Money Laundering Directive.

Switzerland can serve as an example of a country that has introduced some initiatives, for instance Crypto Valley Association, to legally develop an official ICO code aimed at avoiding risks and misconduct by ICO organisers and IGF-1 regarding the creation of ICO methods and standards.

There are a lot of successful ICO stories in Europe and some of them are very inspiring in terms of duration and the total amount of capital

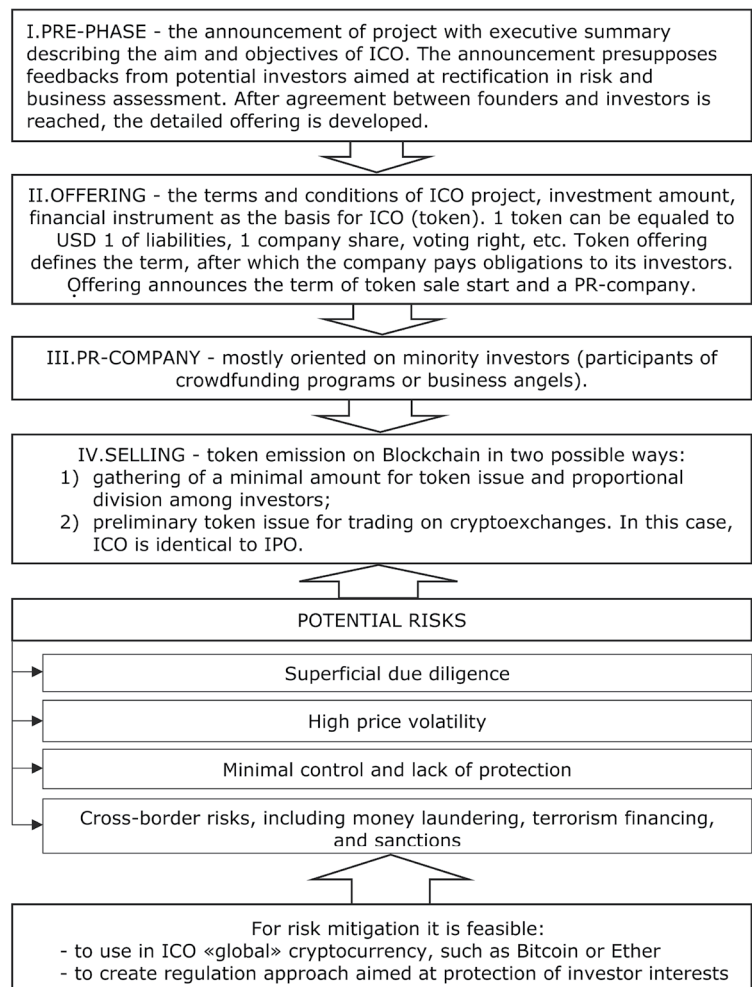


Fig. 2: ICO mechanism and its inherent risks

Source: Compiled by the authors based on [1; 3; 9-10]



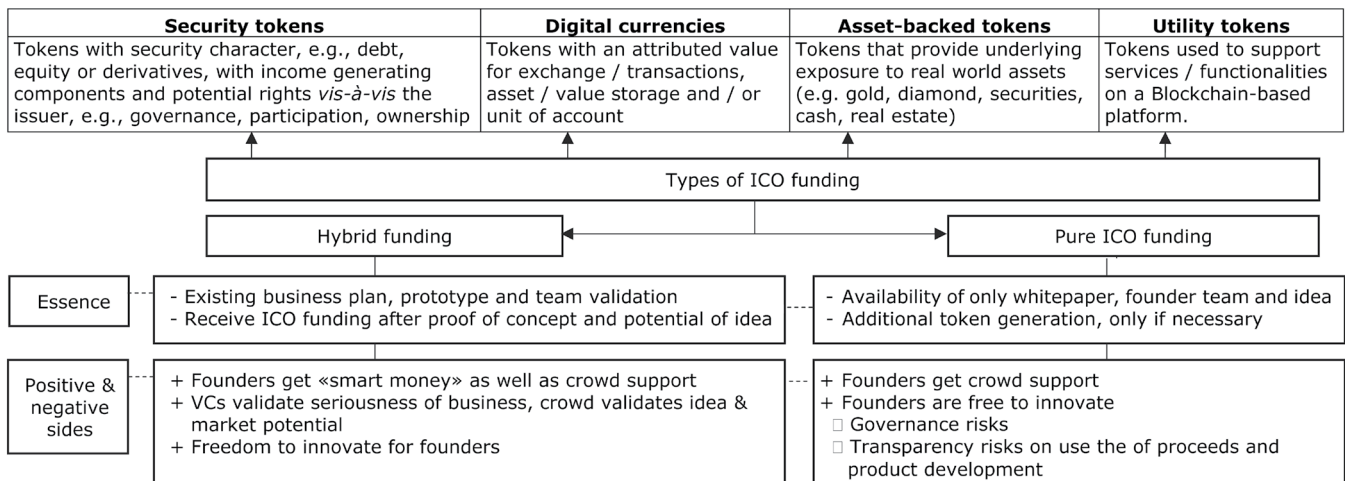


Fig. 3: Business model for ICO performance  
Source: Compiled by the authors based on [1; 3]

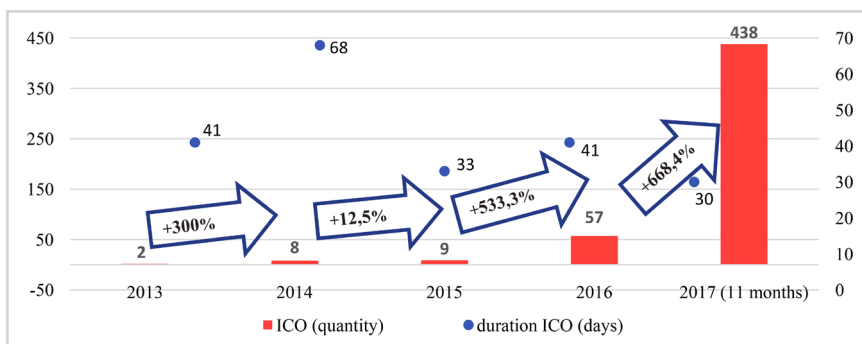


Fig. 4: ICO dynamics and its growth rate in the world in 2013-2017, USD million  
Source: Compiled by the authors based on [2]

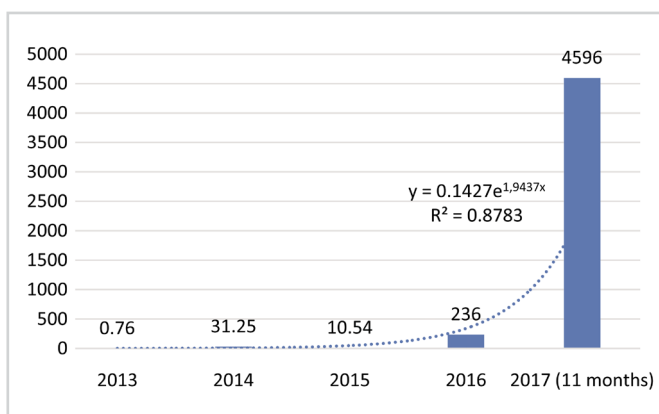


Fig. 5: Amounts of ICO in the world and the exponential trend line with the level of approximation, USD million  
Source: Compiled by the authors based on [2]

raised. For instance, the fintech industry project «Tezos» (Switzerland) (raised USD 238 million in 13 days) [14-15] is focused on decentralised blockchain, forming governance itself. With Tezos it is easy to make formal verification. Another successful fintech project is Bankor (Switzerland) raised USD 156.6 million less than in one day [14; 16]. The peculiarity of this trading platform is the possibility of converting of any two tokens into a network. There is also another example of Swiss fintech industry - The Dao, with its USD 142.5 million in 28 days [14; 17] which provides a new decentralised business model for organising both commercial and non-profit enterprises. Moreover, the code of The Dao is open-sourced and venture capital focus is its specific feature. The ICO technology industry Messaging Platform Status (Switzerland) with its USD 95 million less than in 1 day is also famous for

its rapidness and huge amounts of funds [14; 17]. The idea of this project is to make every mobile device a light client node which gives a client access to the entire Ether.

The Palkadot project (Germany), raising USD 145.2 million in 12 days, belongs to the technology industry [14; 18]. The main idea of its heterogeneous multichain technology is the use of parachains. They have special characteristics which help to reach easier achievement of anonymity or formal verification. Polkadot claims that the blockchain, in which any transactions are executed, remains secure.

France is known for its DomRaider (USD 67.2 million in 27 days) [14; 19]. There are real time auction projects which belong to fintech area. The essence is the auctioning process, in which domain names are accessible to be bought by bidding on this platform.

All the mentioned projects are in the top 15 biggest ICOs. The existence of regulation related to the cryptocurrency market is one of the reasons why the ICO performance in Switzerland is successful.

In Ukraine, a lack of regulation can be considered as a constraint for the development of the ICO market. Besides, there are other obstacles for the implementation of ICO in Ukraine, in terms of which it is reasonable to underline the low level of investors' confidence and awareness, insufficient qualification of the majority of financial specialists in Ukraine and inadequacy of the due diligence procedure. Therefore, in order to increase the level of ICO efficiency, it is required to adopt all relevant legislative norms and procedures, taking into consideration the positive experience of Switzerland.

## 5. Conclusions

We have defined the essence of ICO as a predefined number of transferable tokens to investors. The main characteristic features of the mentioned mechanism are represented by the creation of new crypto tokens, formation of blockchains, existence of unique virtual lock and virtual key for every token, chronological record of token transactions and provision of exclusive access to a certain product or service.

Thus, the four stages are required to implement the ICO mechanism as well as to minimise different types of risks, namely the high volatility, superficial due diligence, minimal government control and lack of protection for investors. The key types of tokens, exemplified as security, digital, asset-backed and utility, could be financed by hybrid or pure ICO funding.

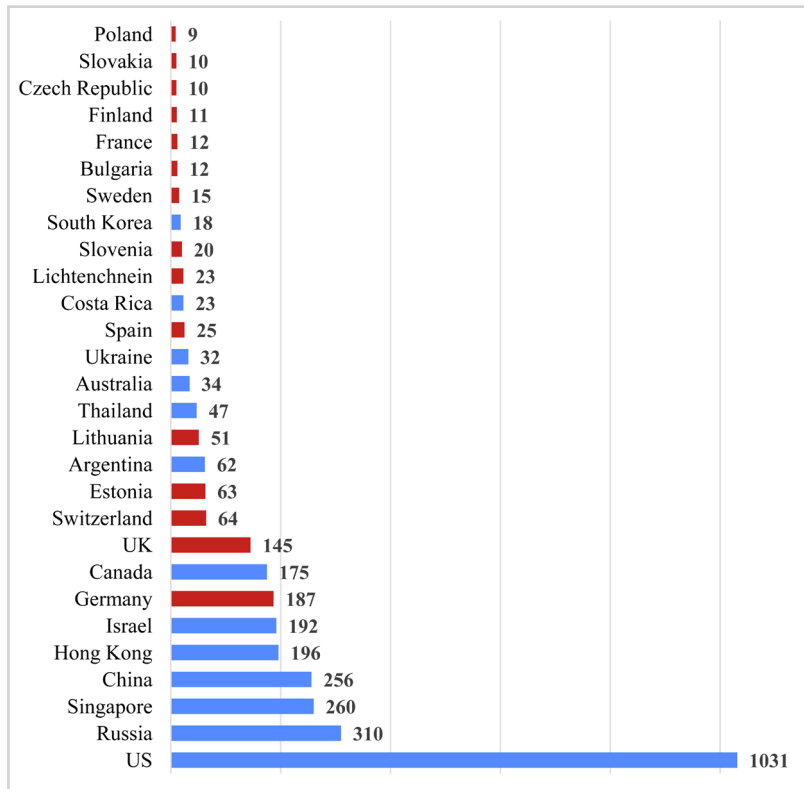


Fig. 6: ICO market represented by countries, USD million

Source: [3]

We have explored huge potential of the development of the ICO market and showed the growth rates in dynamics. The norms of regulation in different countries, where the cases of ICO performance exist, have been studied, which allows us to determine their main principles and similar features. In the EU, ESMA regulations have the great importance in terms of performing activities connected with capital raising, in which ICO is not an exception and should be performed according to the existing rules.

The ICO is a new area for academic financial research. Recent papers and reports by different international organisations confirm the popularity of this new financial tool. Apart from this, most researches stress on risks related to the ICO process, since this phenomenon is not thoroughly studied.

The analysis of the 15 biggest ICOs shows that Switzerland is the leader among European countries in regulating the relevant activity. The majority of those projects are related to the fintech industry, because the country is a leader regarding financial innovations. The total amount of funds raised by the top 15 Swiss projects is about USD 630 million; Ukraine, despite its status of a newcomer in this market, raised USD 32 million, which is a positive trend. At the same time, the Ukrainian ICO market needs to be regulated, which determines the need for further research on ICO.

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